

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of

Louis R. Degenaro, et al.

Serial No.: 10/665,564

Group Art Unit: 2165

Filed: September 22, 2003
M.

Examiner: Syed, Farhan

For: VIRTUAL RESOURCES METHOD, SYSTEM, AND SERVICE

Honorable Commissioner of Patents
Alexandria, VA 22313-1450
MAIL STOP Appeal Brief-Patents

APPELLANT'S BRIEF ON APPEAL UNDER 35 U.S.C. §134(a)

Sir:

Appellant respectfully appeals the decision of the Examiner in the final rejection of claims 1-37 in the Final Office Action mailed November 18, 2009.

I. REAL PARTY OF INTEREST

The real party of interest is International Business Machines Corporation, assignee of 100% interest of the above-referenced patent application, as recorded on September 22, 2003 with the United States Patent and Trademark Office on reel/frame 014530/0523.

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences known to Appellant, Appellant's legal representative or Assignee, which would directly affect or be directly affected by or have a bearing on the Board's decision on this appeal.

III. STATUS OF CLAIMS

Claims 1-37, all the claims presently pending in the application, stand rejected under 35 U.S.C. § 103(a) over Funderburk et al. ("XTABLES: Bridging Relational Technology and XML", hereinafter, Funderburk et al.) in view of Loaiza et al. (U.S. Patent 6,618,812, hereinafter, Loaiza et al. '812) and in further view of Guzman et al. (U.S. Patent 7,082,435, hereinafter, Guzman et al. '435)

Appellant respectfully appeals this rejection.

IV. STATUS OF AMENDMENTS (SUBSEQUENT TO FINAL REJECTION)

A request for reconsideration under 35 USC §1.116 filed on January 19, 2010 after final rejection with no claim amendments, was considered by the Examiner. In an advisory action dated February 1, 2010, the examiner indicated that the request for reconsideration was considered but did not place the application in condition for allowance.

Therefore, the attached claims reflect the version of the claims in the

amendment under 37 CFR §1.111 filed on August 26, 2009.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The bases in the specification for the claims are as follows:

1. (Rejected) A method of developing actual resources without alteration **{e.g., line 21 of page 11 through line 5 of page 12; line 20 of page 12 through line 1 of page 13; lines 20-16 of page 36}** into a collection of virtual resources customized to a particular audience **{e.g., line 13 of page 1 through line 22 of page 2; lines 1-7 of page 32}**, said method comprising:

constructing at least one virtual resource independent of an actual resource **{e.g., line 21 of page 14 through line 8 of page 15; line 21 of page 15 through line 2 of page 16; lines 3- 6 and 23-24 of page 18; 1240 of Figure 12; lines 20-23 of page 30}**;

connecting the actual resource to the at least one virtual resource **{e.g., lines 3-6 of page 18; lines 19-21 of page 19; ref. no. 1240 of Figure 12; lines 20-23 of page 30}**;

retrieving the at least one virtual resource from the tangible computer readable media **{e.g., lines 7-16 of page 18; Figure 5; lines 6-8 of page 21; ref. no. 1250 of Figure 12; lines 22-23 of page 30}**; and

extracting at least one descriptor from said at least one retrieved virtual resource **{e.g., Figure 5; line 15 of page 21 through line 2 of page 22}**,

wherein said virtual resource comprises a resource utilized at a logic authoring time and said actual resource comprises a resource utilized at a runtime **{e.g., lines 6-8 of page 15}**.

9. (Rejected) The method of claim 1,
wherein information constructing the at least one virtual resource includes data independent from the actual resource **{e.g., line 14 of page 12 through line 5 of page 25}**, the method further comprising:

selectively manipulating the retrieved virtual resource by updating or deleting at least a portion of the retrieved virtual resource **{e.g., line 20 of page 17 through line 2 of page 18}**; and

authoring the virtual resource into a logic code stored and executable by the computer to generate a second actual resource from the virtual resource **{e.g., lines 17-24 of page 13 }**.

14. (Rejected) A system for developing actual resources without alteration **{e.g., line 21 of page 11 through line 5 of page 12; line 20 of page 12 through**

line 1 of page 13; lines 20-16 of page 36} into a collection of virtual resources customized to a particular audience **{e.g., e.g., line 13 of page 1 through line 22 of page 2; lines 1-7 of page 32}**, said system comprising:

means for constructing at least one virtual resource independent of at least one actual resource, using a processor on a computer **{e.g., line 21 of page 14 through line 8 of page 15; line 21 of page 15 through line 2 of page 16; lines 3-6 and 23-24 of page 18; 1240 of Figure 12; lines 20-23 of page 30}**;

means for connecting at least one actual resource to at least one virtual resource **{e.g., lines 3-6 of page 18; lines 19-21 of page 19; 1240 of Figure 12; lines 20-23 of page 30}**;

means for retrieving said at least one virtual resource **{e.g., lines 7-16 of page 18; Figure 5; lines 6-8 of page 21; 1250 of Figure 12; lines 22-23 of page 30}**; and

means for extracting at least one descriptor from said at least one retrieved virtual resource **{e.g., Figure 5; line 15 of page 21 through line 2 of page 22}**,

wherein said virtual resource comprises a resource utilized at a logic authoring time and said actual resource comprises a resource utilized at a runtime **{e.g., lines 6-8 of page 15}**.

27. (Rejected) A service to manage descriptions of actual resources in a system comprised of a plurality of actual resources **{e.g., ref. no. 1210 of Fig. 12}**, said service comprising:

defining at least one virtual domain to satisfy a user-requirements analysis **{e.g., lines 5- 7 of page 32}**; and

defining, by a processor, at least one virtual resource describing as least one actual resource within the at least one virtual domain to satisfy the user-requirements analysis **{e.g., lines 5-7 of page 32}**,

wherein said virtual resource comprises a resource utilized at a logic authoring time and said actual resource comprises a resource utilized at a runtime **{e.g., lines 6-8 of page 15}**,

wherein said virtual resource is stored on a tangible computer readable media accessible by the processor **{e.g., Figure 13, line 6 of page 38 through line17 of page 39}**,

wherein said defining the at least one virtual resource relates in part to the actual resource and in part independent of the actual resource **{e.g., line 14 of page 12 through line 5 of page 25}**, and

wherein said defining the at least one virtual resource comprises creating and then manipulating the virtual resource at least in part independent of the actual resource **{e.g., line 14 of page 12 through line 5 of page 25}**.

31. (Rejected) A method of deploying computing infrastructure in which computer readable code is integrated into a computing system, such that said code and said computing system combine to perform a method of developing said actual resources without alteration **{e.g., line 21 of page 11 through line 5 of page 12; line 20 of page 12 through line 1 of page 13; lines 20-16 of page 36}** into a collection of virtual resources customized to a particular audience **{e.g., line 13 of page 1 through line 22 of page 2; lines 1-7 of page 32}**, said method comprising:

constructing at least one virtual resource independent of said actual resources **{e.g., line 21 of page 14 through line 8 of page 15; line 21 of page 15 through line 2 of page 16; lines 3-6 and 23-24 of page 18; 1240 of Figure 12; lines 20-23 of page 30}**;

connecting at least one actual resource to at least one virtual resource **{e.g., lines 3-6 of page 18; lines 19-21 of page 19; 1240 of Figure 12; lines 20-23 of page 30}**;

performing at least one retrieval of a virtual resource **{e.g., lines 7-16 of page**

18; Figure 5; lines 6-8 of page 21; 1250 of Figure 12; lines 22-23 of page 30};

and

extracting at least one descriptor from said at least one retrieved virtual resource **{e.g., Figure 5; line 15 of page 21 through line 2 of page 22},**

wherein said virtual resource comprises a resource utilized at a logic authoring time and said actual resource comprises a resource utilized at a runtime **{e.g., lines 6-8 of page 15}.**

32. (Rejected) A tangible computer-readable storage medium tangibly embodying a program of machine-readable instructions executable by a digital processing apparatus to perform a method of developing said actual resources without alteration **{e.g., line 21 of page 11 through line 5 of page 12; line 20 of page 12 through line 1 of page 13; lines 20-16 of page 36}** into a collection of virtual resources customized to a particular audience **{e.g., e.g., line 13 of page 1 through line 22 of page 2; lines 1-7 of page 32},** said method comprising:

constructing at least one virtual resource independent of said actual resources **{e.g., line 21 of page 14 through line 8 of page 15; line 21 of page 15 through line 2 of page 16; lines 3-6 and 23-24 of page 18; 1240 of Figure 12; lines 20-23 of page 30};**

connecting at least one of said actual resources to said at least one virtual resource {e.g., lines 3-6 of page 18; lines 19-21 of page 19; 1240 of Figure 12; lines 20-23 of page 30};

performing at least one retrieval of said virtual resource {e.g., lines 7-16 of page 18; Figure 5; lines 6-8 of page 21; 1250 of Figure 12; lines 22-23 of page 30}; and

extracting at least one descriptor from said at least one retrieved virtual resource {e.g., Figure 5; line 15 of page 21 through line 2 of page 22},

wherein said virtual resource comprises a resource utilized at a logic authoring time and said actual resource comprises a resource utilized at a runtime {e.g., lines 6-8 of page 15}.

33. (Rejected) A method of developing actual resources without alteration {e.g., line 21 of page 11 through line 5 of page 12; line 20 of page 12 through line 1 of page 13; lines 20-16 of page 36} into a collection of virtual resources customized to a particular audience {e.g., line 13 of page 1 through line 22 of page 2; lines 1-7 of page 32}, said method comprising:

constructing at least one virtual resource independent of an actual resource {e.g., line 21 of page 14 through line 8 of page 15; line 21 of page 15 through

line 2 of page 16; lines 3- 6 and 23-24 of page 18; 1240 of Figure 12; lines 20-23 of page 30}; and

providing in the at least one virtual resource a structured meta-data layer which contains semantic information for leveraging by a consumer of the virtual resources **{e.g., line 2 of page 32 through line 5 of page 38}**,

wherein said virtual resource comprises a resource utilized at a logic authoring time and said actual resource comprises a resource utilized at a runtime **{e.g., lines 6-8 of page 15}**.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Appellant presents the following issue for review by the Board of Patent Appeals and Interferences:

Whether Claims 1-37 are not patentable under 35 U.S.C. § 103(a) over Funderburk et al. ("XTABLES: Bridging Relational Technology and XML", hereinafter, Funderburk et al.) in view of Loaiza et al. (U.S. Patent 6,618,812, hereinafter, Loaiza et al. '812) and in further view of Guzman et al. (U.S. Patent 7,082,435, hereinafter, Guzman et al. '435), as alleged by the Examiner.

VII. ARGUMENT

A. Rejection of Claims 1-37 under 35 U.S.C. § 103(a) by Funderburk

et al. ("XTABLES: Bridging Relational Technology and XML", hereinafter, *Funderburk et al.*) in view of Loaiza et al. (U.S. Patent 6,618,812, hereinafter, *Loaiza et al.* '812) and in further view of Guzman et al. (U.S. Patent 7,082,435, hereinafter, *Guzman et al.* '435.

1. Appellant's arguments with respect to Independent Claims 1, 14, 27, 31, 32 and 33.

The Examiner alleges that *Funderburk et al.* as modified by *Loaiza et al.* '812 and further modified by *Guzman et al.* '435, renders obvious the claimed invention. Appellant submits, however, that there are elements of the claimed invention which are neither taught nor suggested by the combination of *Funderburk et al.*, *Loaiza et al.* '812 and *Guzman et al.* '435.

The claimed invention includes (e.g., claim 1) *a method of developing actual resources without alteration into a collection of virtual resources customized to a particular audience, said method comprising:*

constructing at least one virtual resource independent of an actual resource;

storing the virtual resource in a tangible computer readable media;

connecting the actual resource to the at least one virtual resource;

retrieving the at least one virtual resource from the tangible computer readable media; and

extracting at least one descriptor from said at least one retrieved virtual resource,

wherein said virtual resource comprises a resource utilized at a logic authoring time and said actual resource comprises a resource utilized at a runtime.

The Examiner on page 2 of the present office action, the Examiner disagrees with Appellant's argument of the alleged prior arts of record not teaching or suggesting constructing at least one virtual resource independent of an actual resource. The Examiner argues that: "At least *Guzman et al.* '435 discloses or suggests constructing at least one virtual resource independent of an actual resource (i.e. '...a significant aspect of the invention is that the column signature of the virtual table is not dependent upon the format or column signature of the underlying storage vehicle.' The preceding text clearly suggests constructing at least one virtual resource (i.e. column signature of the virtual table) independent of an actual resource (i.e. column signature of the underlying storage vehicle.))(column 2, lines 58-67). "

However, *Guzman*, like *Funderburk et al.* is dealing with format and signatures. The virtual table is "not dependent" with regard to the formatting or signature, rather than the actual resource.

Guzman et al. '435 like *Funderburk et al.* is teaching of forming. *Funderburk et al.* is basically teaching of changing a format of the relational database into XML so that the data from the relational databases that are not in XML format can be used to exchange data for applications such as Internet-based

business applications. (See, Abstract and page 619, 2nd column, last paragraph to page 625 of *Funderburk et al.*).

The claimed invention, on the other hand, has a virtual resource that is not directly mapped from the actual resources as the virtual resource is *independent* from the actual resources. Additionally, the claimed invention does not just change the format to allow for queries or other application use of the database information, but the claimed invention has resources of the virtual resource that are utilized at a *logic authoring* time, where the virtual resource are independent of the actual resource.

Moreover, *Loaiza et al. '812*, *Loaiza et al. '812* is teaching away from the claim invention because in col. 5, lines 39-41 states, "The user-defined functions dynamically retrieve and populate column values for a virtual table from underlying data sources (i.e., recovery logs)." Therefore, it is clear that *Loaiza et al. '812* is teaching away from the claimed invention, since *Loaiza et al. '812* teaches that the virtual table is from the actual resources of the data sources. Therefore, the virtual table in *Loaiza et al. '812* is dependent on the actual resources. Therefore, the combination of references are improper. Additionally, like *Loaiza et al. '812*, also is teaching of changing the format of the database information and specifically the recovery log information in the database. (See Abstract and claims 1-2 of *Loaiza et al. '812*). All the cited reference have fundamental differences from the claimed

invention.

Therefore, the combination is teaching of the lack of dependence of the virtual table and the formatting and not the independence with the actual resource itself.

The Examiner disagrees with Appellant's argument that the alleged prior arts of record do not teach or suggest connecting the actual resource to the at least one virtual resource. The Examiner argues that: "At least *Guzman et al.* '435 discloses or suggests connecting the actual resource to an at least one virtual resource (i.e. 'At run-time, or whenever the virtual table is to be accessed, the data from the underlying data source(s) is accessed using the appropriate format or column signature of the virtual table.' The preceding text clearly suggests or discloses connecting an actual resource (i.e. underlying data source) to the at least one virtual source (i.e. column signature of the virtual table) at run-time.)(column 2, lines 65-67; column 3, lines 1-6)."

However, the connection is regarding the format and signature with the virtual table. *Guzman et al.* '435, like *Funderburk et al.*, is dealing in the middleware that accommodates the formatting or signature differences and not of connecting the actual resource with the virtual resource as claimed, as a whole, in order to provide a virtual resource independent of the actual resource.

The Examiner does not agree with Appellant's argument that the alleged

prior arts of record do not teach or suggest virtual resource comprises a resource utilized at the logic authoring time. The Examiner argues that "At least Guzman discloses or suggests virtual resource comprises a resource utilized at the logic authoring time (i.e. at run-time)(column 2, lines 65-67; column 3, lines 1-6)."

However, the full claim limitation states *said virtual resource comprises a resource utilized at a logic authoring time and said actual resource comprises a resource utilized at a runtime*. *Guzman et al. '435* only mentions run-time of the virtual table to be accessed. *Guzman et al. '435* fails to teach or suggest the virtual resources utilized at a logic authoring time *and* the actual resource utilized at runtime. Both limitations are not taught by *Guzman et al. '435* or the combination of references.

Therefore, Appellant submits that there are elements of the claimed invention that are not taught or suggest by the combination of *Funderburk et al.*, *Loaiza et al. '812* and *Guzman et al. '435*, and the Board is respectfully requested to reconsider and withdraw this rejection.

2. Appellant's arguments with respect to Dependent Claim 9.

The combination of references also fail to teach or suggest (e.g., claim 9) selectively manipulating the retrieved virtual resource by updating or deleting at

least a portion of the retrieved virtual resource; and authoring the virtual resource into a logic code stored and executable by a computer to generate a second actual resource from the virtual resource.

Regarding claim 9, the Examiner argues on page 14 of the present office action the following: "Guzman teaches... the method further comprising: selectively manipulating the retrieved virtual resource by updating or deleting at least a portion of the retrieved virtual resource (The tables in Guzman utilizes SQL language which includes the option of updating or deleting at least portion of the retrieved virtual resource. Therefore, this limitation is at least suggested by Guzman. In addition, updating and deleting the retrieved virtual resource is an intended use of manipulating the retrieved virtual resource.)"

However, merely using SQL language does not teach or suggest of selectively manipulating the retrieved virtual resource as claimed. A suggestion is not merely what is possible, but what is actually taught or suggested. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.' ” *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations omitted). Nothing in *Guzman et al.* '435 makes such a teaching or suggestion.

The Examiner also argues that *Guzman et al.* '435 teaches "authoring the virtual resource into a logic code stored and executable by the computer to generate

a second actual resource from the virtual resource (see column 10, lines 35-67)."

However, col. 10, lines 35-67 discloses a computer in general with processor and input units. However, there is no teaching or suggestion that a second actual resource is generated from the virtual resource or that there is a teaching of authoring the virtual resource into logic code stored. Merely showing a memory does not teach or suggest the entire limitation of authoring the code as claimed. The claim as a whole must be looked at and not only pieces from each reference. See e.g., MPEP §2141.02.

Therefore, Appellant again submits that there clearly are elements of the claimed invention that are not taught or suggest by the combination of *Funderburk et al.*, *Loaiza et al.* '812 and *Guzman et al.* '435, and the Board is respectfully requested to reconsider and withdraw this rejection.

VIII. CONCLUSION

In view of the foregoing, Appellant submits that claims 1-37, all of the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. Thus, the Board is respectfully requested to remove the rejections of claims 1-37.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Assignee's Deposit Account No. 50-0510.

Respectfully Submitted,



Date: April 19, 2010

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IX. CLAIMS APPENDIX

1. (Rejected) A method of developing actual resources without alteration into a collection of virtual resources customized to a particular audience, said method comprising:

constructing at least one virtual resource independent of an actual resource;
storing the virtual resource in a tangible computer readable media, using a processor on a computer;

connecting the actual resource to the at least one virtual resource;
retrieving the at least one virtual resource from the tangible computer readable media; and

extracting at least one descriptor from said at least one retrieved virtual resource,

wherein said virtual resource comprises a resource utilized at a logic authoring time and said actual resource comprises a resource utilized at a runtime.

2. (Rejected) The method of claim 1, wherein said connecting comprises directly mapping the at least one actual resource to the at least one virtual resource.

3. (Rejected) The method of claim 1, wherein the constructing comprises at least one of:

- renaming a method;
- hiding a method;
- composing a method;
- renaming an attribute;
- hiding an attribute;
- composing an attribute;
- assigning to at least one domain;
- designating as a collection;
- assigning to at least one validator;
- assigning a description;
- designating as at least one of ready and not ready; and
- assigning a last modified date and time.

4. (Rejected) The method of claim 1, wherein said at least one virtual resource comprises a plurality of virtual resources and said virtual resources are connected to each other through a relationship carrying semantic that can be leveraged by a consumer of resources, said method further comprising:

constructing at least one virtual relationship between at least two virtual resources;

coupling at least one actual relationship implementor to at least one virtual relationship;

performing at least one retrieval of a virtual relationship; and

extracting at least one descriptor from at least one retrieved virtual relationship.

5. (Rejected) The method of claim 4, wherein said coupling comprises:

directly mapping said at least one actual relationship implementor to said at least one virtual relationship.

6. (Rejected) The method of claim 4, wherein the relationship constructing comprises at least one of:

assigning a root virtual resource name;

assigning a target virtual resource name;

assigning a relationship name;

assigning a relationship type;

assigning a description;

assigning a target instance naming scheme;

designating as at least one of ready and not ready; and

assigning a last modified date and time.

7. (Rejected) The method of claim 4, wherein the retrieving comprises locating virtual

relationships by at least one of:

a domain;

a name;

a root;

a type; and

a target.

8. (Rejected) The method of claim 1, wherein virtual resources are connected to each other, said method further comprising:

constructing at least one virtual relationship between at least two virtual resources;

coupling at least one actual relationship implementor to at least one virtual relationship;

performing at least one retrieval of a virtual relationship; and

extracting at least one descriptor from at least one retrieved virtual relationship,

wherein said coupling comprises directly mapping said at least one actual relationship implementor to said at least one virtual relationship.

9. (Rejected) The method of claim 1,

wherein information constructing the at least one virtual resource includes data independent from the actual resource, the method further comprising:

selectively manipulating the retrieved virtual resource by updating or deleting at least a portion of the retrieved virtual resource; and

authoring the virtual resource into a logic code stored and executable by the computer to generate a second actual resource from the virtual resource.

10. (Rejected) The method of claim 8, wherein the relationship constructing comprises at least one of:

assigning a root virtual resource name; assigning a target virtual resource name; assigning a relationship name;

assigning a relationship type;

assigning a description;

assigning a target instance naming scheme;

designating as at least one of ready and not ready; and

assigning a last modified date and time.

11. (Rejected) The method of claim 1, wherein the retrieving comprises locating virtual resources by at least one of:

a domain;

a name; and

a relationship.

12. (Rejected) The method of claim 8, wherein the retrieving comprises locating virtual relationships by at least one of:

a domain;

a name;

a root;

a type; and

a target.

13. (Rejected) The method of claim 2, wherein descriptor validator information is employed to limit actual resource usage.

14. (Rejected) A system for developing actual resources without alteration into a collection of virtual resources customized to a particular audience, said system comprising:

means for constructing at least one virtual resource independent of at least one actual resource, using a processor on a computer;

means for connecting at least one actual resource to at least one virtual resource;

means for retrieving said at least one virtual resource; and

means for extracting at least one descriptor from said at least one retrieved virtual resource,

wherein said virtual resource comprises a resource utilized at a logic authoring time and said actual resource comprises a resource utilized at a runtime.

15. (Rejected) The system of claim 14, wherein said means for connecting comprises means for directly mapping the at least one actual resource to the at least one virtual resource.

16. (Rejected) The system of claim 14, wherein the means for constructing performs at least one of:

renaming a method;

hiding a method;

composing a method;

renaming an attribute;

hiding an attribute;

composing an attribute;

assigning to at least one domain;

designating as a collection;

assigning to at least one validator;

assigning a description;

designating as at least one of ready and not ready; and

assigning a last modified date and time.

17. (Rejected) The system of claim 14, wherein virtual resources are connected to each other through a relationship carrying semantic that can be leveraged by a consumer of resources, comprising:

means for constructing at least one virtual relationship between at least two virtual resources;

means for coupling at least one actual relationship implementor to at least one virtual relationship;

means for performing at least one retrieval of a virtual relationship; and
means for extracting at least one descriptor from at least one retrieved virtual relationship.

18. (Rejected) The system of claim 17, wherein said means for coupling comprises:
means for directly mapping said at least one actual relationship implementor to said at least one virtual relationship.

19. (Rejected) The system of claim 17, wherein the means for constructing at least one virtual relationship performs at least one of:

assigning a root virtual resource name;
assigning a target virtual resource name;
assigning a relationship name;
assigning a relationship type;
assigning a description;
assigning a target instance naming scheme;

designating as at least one of ready and not ready; and

assigning a last modified date and time.

20. (Rejected) The system of claim 14, wherein the means for retrieving performs locating virtual relationships by at least one of:

a domain;

a name;

a root;

a type; and

a target.

21. (Rejected) The system of claim 14, wherein virtual resources are connected to each other, said system further comprising:

means for constructing at least one virtual relationship between at least two virtual

resources;

means for coupling at least one actual relationship implementor to at least one virtual

relationship;

means for performing as least one retrieval of a virtual relationship; and

means for extracting at least one descriptor from at least one retrieved virtual relationship.

22. (Rejected) The system of claim 21, wherein said means for coupling comprises: means for directly mapping said at least one actual relationship implementor to said at least one virtual relationship.

23. (Rejected) The system of claim 21, wherein the means for constructing a relationship comprises at least one of:

- means for assigning a root virtual resource name;
- means for assigning a target virtual resource name;
- means for assigning a relationship name;
- means for assigning a relationship type;
- means for assigning a description;
- means for assigning a target instance naming scheme;
- means for designating as at least one of ready and not ready; and
- means for assigning a last modified date and time.

24. (Rejected) The system of claim 21, wherein the means for retrieving comprises locating

virtual resources by at least one of:

a domain;

a name; and

a relationship.

25. (Rejected) The system of claim 21, wherein the means for retrieving comprises locating

virtual relationships by at least one of:

a domain;

a name;

a root; and

a target.

26. (Rejected) The system of claim 15, wherein descriptor validator information is employed to limit actual resource usage.

27. (Rejected) A service to manage descriptions of actual resources in a system

comprised of a plurality of actual resources, said service comprising:

defining at least one virtual domain to satisfy a user-requirements analysis;

and

defining, by a processor, at least one virtual resource describing as least one actual resource within the at least one virtual domain to satisfy the user-requirements analysis,

wherein said virtual resource comprises a resource utilized at a logic authoring time and said actual resource comprises a resource utilized at a runtime,

wherein said virtual resource is stored on a tangible computer readable media accessible by the processor,

wherein said defining the at least one virtual resource relates in part to the actual resource and in part independent of the actual resource, and

wherein said defining the at least one virtual resource comprises creating and then manipulating the virtual resource at least in part independent of the actual resource.

28. (Rejected) The service of claim 27, further comprising:

analyzing a requirement for actual resource usage, to provide said user requirements analysis.

29. (Rejected) The service of claim 27, further comprising:

defining at least one virtual relationship between at least two virtual resources.

30. (Rejected) The service of claim 29, wherein at least one of a virtual resource and a virtual relationship is utilized to create an application program.

31. (Rejected) A method of deploying computing infrastructure in which computer readable code is integrated into a computing system, such that said code and said computing system combine to perform a method of developing said actual resources without alteration into a collection of virtual resources customized to a particular audience, said method comprising:

constructing at least one virtual resource independent of said actual resources;

connecting at least one actual resource to at least one virtual resource;
performing at least one retrieval of a virtual resource; and

extracting at least one descriptor from said at least one retrieved virtual resource,

wherein said virtual resource comprises a resource utilized at a logic authoring time and said actual resource comprises a resource utilized at a runtime.

32. (Rejected) A tangible computer-readable storage medium tangibly embodying a program of machine-readable instructions executable by a digital processing apparatus to perform a method of developing said actual resources without alteration into a collection of virtual resources customized to a particular audience, said method comprising:

constructing at least one virtual resource independent of said actual resources;

connecting at least one of said actual resources to said at least one virtual resource;

performing at least one retrieval of said virtual resource; and

extracting at least one descriptor from said at least one retrieved virtual resource,

wherein said virtual resource comprises a resource utilized at a logic authoring time and said actual resource comprises a resource utilized at a runtime.

33. (Rejected) A method of developing actual resources without alteration into a collection of virtual resources customized to a particular audience, said method comprising: constructing at least one virtual resource independent of an actual resource; and

providing in the at least one virtual resource a structured meta-data layer which contains semantic information for leveraging by a consumer of the virtual resources,

wherein said virtual resource comprises a resource utilized at a logic authoring time and said actual resource comprises a resource utilized at a runtime.

34. (Rejected) The method of claim 33, wherein said semantic information includes relationships with agreed upon semantics including any of "related-to", "contains", and "is-conflicting-with", between entities.

35. (Rejected) The method of claim 33, wherein said semantic information allows any of making new resource manipulation operations available to logic authoring tools and serving as an input to a conflict detection tool.

36. (Rejected) The method of claim 1, further comprising:

creating at least one virtual resource instance;

assigning an identity to the at least one virtual resource instance;

associating the at least one virtual resource instance with one virtual resource; and

translating the retrieved virtual resource into an actual resource utilized at runtime.

37. (Rejected) The method of claim 4, further comprising:

creating at least one virtual relationship instance;
assigning an identity to the at least one virtual relationship instance; and
associating the at least one virtual relationship instance with one virtual relationship.

X. EVIDENCE APPENDIX

Not applicable.

XI. RELATED PROCEEDINGS APPENDIX

Not applicable.